

WHAT IS CLAIMED IS:

1. A method for patterned metallization of a surface of a substrate, comprising the steps of:

preheating the substrate to a temperature which is below a
5 deposition temperature of a predetermined metal dissolved in a fluid
provided above the surface of the substrate; and

performing patterned deposition of the predetermined metal
in predetermined regions on the surface of the substrate by
locally increasing the temperature at the surface of the substrate to
10 above the deposition temperature.

2. The method according to Claim 1, wherein the temperature
at the surface of the substrate is locally increased to above the
deposition temperature by selective provision of photons in the
predetermined regions.

15 3. The method according to Claim 2, wherein the photons are
generated by a laser device.

4. The method according to Claim 3, wherein the laser device
guides a laser beam selectively over a surface of the predetermined
regions on the substrate.

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5. The method according to Claim 2, wherein, following

photon-based deposition of a starting metallization in the predetermined regions on the substrate, the temperature of the substrate is increased until the deposition of the predetermined metal takes place autocatalytically up to a predetermined
5 metallization thickness.

6. The method according to Claim 2, wherein the photons are generated by a device for generating light pulses.

10 7. The method according to Claim 6, wherein a mask is applied to the surface of the substrate before the temperature is locally increased by the light pulses.

8. The method according to Claim 7, wherein the mask has a
15 reflective surface.

9. The method according to claim 8, wherein the reflective surface includes chromium.

20 10. The method according to Claim 1, further comprising performing the patterned deposition of the predetermined metal in at least one of a locally heated region and the predetermined region autocatalytically up to a desired metallization thickness.

11. The method according to Claim 1, wherein the predetermined metal is fed to the substrate by a liquid solution of an organometal compound.

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12. The method according to Claim 11, wherein the organometal compound is dissolved in an aprotic solvent.

13. The method according to Claim 12, wherein the aprotic
10 solvent includes one of carbon dioxide (CO_2), a hydrocarbon, a paraffin, an aromatic and an ether.

14. The method according to Claim 1, wherein the substrate includes one of silicon dioxide (SiO_2) or silicon nitride (SiN).

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15. The method according to Claim 1, wherein the substrate includes one of a polyimide and polybenzoxazoles.

16. The method according to Claim 1, wherein the method is
20 performed in a process chamber having a covering device.

17. The method according to Claim 16, wherein the covering

device is made from quartz glass.

18. The method according to Claim 16, wherein the covering device is transparent to photons.

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19. The method according to Claim 1, wherein:

the substrate is positioned on a holder; and

a temperature of the holder is capable of being controlled.

10 20. The method according to Claim 1, further comprising controlling the temperature of supplied process chemicals.

21. The method according to Claim 20, wherein one of the supplied process chemicals includes a solution in which the
15 predetermined metal is dissolved.

22. The method according to Claim 1, wherein the patterned metallization forms a rewiring device on the surface of the substrate.

20 23. The method according to Claim 22, wherein the substrate is

a passivated semiconductor substrate.